THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A method for finely adjusting, at a tack point, the width of a gap between a bottom edge of a steel side wall of an elevated cylindrical tank and a top edge of a steel strip being fed from a coil being transported by a machine moving circularly within the tank, said edges forming a joint line, the strip already having been welded along part of its length to the tank wall along the joint line behind the tack point, comprising:

mechanically monitoring the plumbness, elevation and levelness of the tank wall;

responsive to such monitoring, manipulating and positioning the tank wall so that it is plumb and in plane at a pre-determined elevation at the tack point;

supplying, manipulating and positioning the strip so that it aligns with and assumes the curvature of the tank wall at the tack point, with the strip and wall edges being separated to provide the gap at the tack point;

monitoring the width of the gap; and,

responsive to such gap width monitoring, radially moving the bottom of the strip as required to thereby adjust the plumbness of the strip and effect an adjustment of the gap width at the tack point to bring it to a pre-determined optimum width for welding.

2. The method as set forth in claim 1 comprising:

supporting the tank wall and strip above and below the joint line in the vicinity of the tack point with external arcuate fitting frame means conforming to the curvature of the tank wall; and

internally pressing the wall and strip against the fitting frame means to bring them into corresponding alignment, curvature and plumbness at the tack point.

3. A method for controlling the width of a gap, at a tack point, between a bottom edge of a steel side wall of an elevated cylindrical tank and a top edge of a steel strip being fed from a coil being transported by a machine moving circularly within the tank, said edges forming a joint line, the strip already having been welded along part of its length to the tank wall along the joint line behind the tack point, comprising:

mechanically monitoring the plumbness, elevation and levelness of the tank wall;

responsive to such monitoring, manipulating and positioning the tank wall so that it is plumb and in plane at a pre-determined elevation at the tack point;

supplying, manipulating and positioning the strip so that it aligns with and assumes the curvature of the tank wall at the tack point, with the strip and wall edges being separated to provide the gap at the tack point;

mechanically monitoring the width of the gap at the tack point;

holding and supporting the strip at its bottom edge; and

responsive to such gap width monitoring, radially moving the bottom of the strip through a relatively coarse travel to thereby adjust the gap width at the tack point by a relatively fine amount to bring it to a pre-determined optimum width for welding.

4. A machine for supplying, manipulating and positioning steel strip to locate the strip's upper edge in spaced relationship below the lower edge of an elevated cylindrical tank wall, to which the strip is already welded along part of its length, to form a gap at a joint line and at a tack point, which gap has a width optimal for welding of the strip to the wall, comprising:

a generally horizontal main frame;

first means for conveying the main frame and positioning it as required;

second means, supporting the main frame on the conveying means, for separately adjusting the elevation, attitude and radius of the main frame;

third means for carrying a coil of steel strip on the main frame and dispensing and straightening strip so that it substantially conforms with the curvature of the tank wall; and

fourth means, connected with the main frame, for supporting and holding the straightened strip at its lower edge, so that the strip is substantially upright relative to the main frame;

whereby the attitude, elevation and radius of the main frame may be adjusted to vary the width of the gap between the tank wall and strip at the tack point.

5. The machine as set forth in claim 4 comprising:

fifth means, connected with the main frame, for externally supporting the strip and tank wall above and below the joint line in the vicinity of the tack point; and

sixth means, carried by the main frame, for pressing the strip and tank wall against the fifth means to align them.

6. The machine as set forth in claim 5 wherein:

the fifth means comprises a fitting frame curved to conform with the curvature of the tank wall.

7. The machine as set forth in claim 4, 5 or 6 wherein:

the fourth means is rigidly connected with the main frame and is operative to hold the strip at a pre-determined set angle relative to the plane of the main frame, so that a change in side to side level of the main frame will vary the plumbness of the strip.

8. The machine as set forth in claim 4, 5 or 6 comprising:

seventh means for mechanically monitoring the plumbness and elevation of the tank wall adjacent the tack point and activating the second means to adjust the plumbness and elevation of the tank wall so that it is plumb and in plane; and

eighth means for mechanically monitoring the width of the gap and activating the second means as required to adjust the width of the gap to a pre-determined value.

9. The machine as set forth in claim 4, 5 or 6 wherein:

the fourth means is rigidly connected with the main frame and is operative to hold the strip at a pre-determined set angle relative to the plane of the main frame, so that a change in side to side level of the main frame will vary the plumbness of the strip; and further comprising

seventh means for mechanically monitoring the plumbness and elevation of the tank wall and activating the second means as required to adjust the plumbness and elevation of the tank wall are required; and

eighth means for mechanically monitoring the width of the gap and activating the second means as required to adjust the width of the gap to a pre-determined value.